

CLAIMS:

1. A computer-implemented method of valuing products, comprising the steps of:

identifying a set of product components;

5 designing a set of products from said components;

assigning a price to each said product;

assigning demand probability values, such that a probability value is associated with each of said products;

10 calculating component values, such that a component value is obtained for each of said components, by performing the following steps: (a) assuming a beginning value for each of said components; (b) for a first said component, calculating prorated values, such that for products using that component, a prorated value is

15 calculated on that component by calculating the difference between the product price and a value of the product's other components; (c) calculating a component value as a function of said prorated values and said probability values; (d) repeating steps (b) and (c) for all said components; (e) determining whether said component values converge; and (f) if any component value does not converge, using the calculated component values as the beginning component value and repeating said steps (b) through (e) for that component; and

20 calculating a value for each said product, based on the results of the preceding step, by adding the component value of each component of that product.

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2. The method of Claim 1, wherein step (d) is performed by multiplying a probability values times prorated values.

3. The method of Claim 1, wherein step (d) is performed by obtaining a sum of products of probability values and prorated values.

4. The method of Claim 1, wherein said probability values include both the probability of demand for a product and the probability that demand will arrive in a certain order vis a vis other products.

5. The method of Claim 1, wherein said method is performed to value non-standard products and said assigning step is performed by assigning prices of standard products.

6. A computer-implemented method of pricing an order for a product based on varying lead times during a specified time period, comprising the steps of:

calculating a set of values for said product over a range of available supplies of said product;

determining a size  $Q$  of said order;

selecting a set of order points during said time horizon, each said order point having a lead time  $LT$  to the next order point;

for a first order point, calculating an incremental production quantity as  $Q/LT$ , and calculating revenue displaced by said incremental production quantity using said set of product values;

repeating said calculating step for each said order point;

calculating an average displaced revenue; and

calculating the price for said order, using the results of the preceding step.

7. The method of Claim 6, wherein said product has multiple components and further comprising the steps of repeating all steps for each component and adding the results.

8. The method of Claim 7, wherein said set of minimum acceptable values is calculated by (a) assuming a

beginning value for each of said components; (b) for a first said component, calculating prorated values, such that for each product using that component, a prorated value is calculated on that component by calculating the difference between the product price and a value of the product's other components; (c) calculating a component value as a function of said prorated values and said probability values; (d) repeating steps (b) and (c) for all said components; (e) determining whether said component values converge; and (f) if any component value does not converge, using the calculated component values as the beginning component value and repeating said steps (b) through (e) for that component; and (g) adding the values of each component.

9. The method of Claim 6, wherein said displaced revenue is calculated by integrating a curve representing said set of product values.

10. The method of Claim 6, wherein said displaced revenue is calculated as the difference between a total potential revenue determined by said product values for all S and the total potential revenue for S - Q.

11. A computer-implemented method of pricing make-to-order products, comprising the steps of:

designing a set of products, each having an associated delivery time and price;

assigning a demand probability value to each of said products;

calculating an expected revenue from said products for at least two available capacities, said expected revenue being a function of said demand probability values and said prices;

calculating an asking price for each of said products as the difference between its expected revenue from successive available capacities.

5           12. The method of Claim 11, wherein said expected revenue is calculated as a sum of products of said probability values and said prices.

10           13. The method of Claim 11, wherein said expected revenue is calculated from a binary tree representing said probability values and said prices.

15           14. The method of Claim 11, wherein said expected revenue is calculated for each product in accordance in response to a product control policy.

20           15. The method of Claim 11, further comprising the step of comparing said asking price for different products at a given capacity.

25           16. A computer-implemented tool for valuing manufactured products, comprising:

means for designing a set of products, each said product having one or more components; and

30           means for calculating values of said products by assigning demand probability values, such that a probability value is associated with each of said products; then by calculating component values, such that a component value is obtained for each of said components, by performing the following steps: (a) assuming a beginning value for each of said components; (b) for a first said component, calculating prorated values, such that for each product using that component, a prorated value is calculated on that component by calculating the difference  
35           between the product price and a value of the product's

other components; (c) calculating a component value as a function of said prorated values and said probability values; (d) repeating steps (b) and (c) for all said components; (e) determining whether said component values converge; and (f) if any component value does not converge, using the calculated component values as the beginning component value and repeating said steps (b) through (e) for that component; and then by calculating a value for each said product, based on the results of the preceding step, by adding the component value of each component of that product.

17. The method of Claim 16, wherein said means for designing provides each said product with an associated lead time and wherein said means for calculating further uses lead time values and said component values to determine product values.

18. The method of Claim 16, wherein said means for designing provides each said product with an associated delivery time and wherein said means for calculating further uses delivery time values and said component values to determine product values.

19. The method of Claim 16, further comprising means for implementing a product control policy, and further comprising the step of using said product values to determine whether to accept orders for products.